

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

**CERTIFICATE OF WAIVER OR AUTHORIZATION**

ISSUED TO

Stephen B. Hottman, Deputy Director, Physical Science Lab, New Mexico State University

ADDRESS

P.O. Box 30002, Las Cruces, New Mexico 88003-8002

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

OPERATION OF "PUBLIC" REMOTELY OPERATED AIRCRAFT (ROA), IN THE OPERATING AIRSPACE IN THE VICINITY OF AND NORTHWEST OF LAS CRUCES MUNICIPAL AIRPORT, LAS CRUCES, NEW MEXICO, AND WITHIN THE TRANSITION AIRSPACE LOCATED BETWEEN THE OPERATING AIRSPACE AND THE WESTERN BOUNDARY OF RESTRICTED AREA R-5107B, AT AND BELOW 17,500 FEET MSL, AND WITHIN OTHER AIRSPACE AS SPECIFICALLY DEFINED BY THE SPECIAL PROVISIONS.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE

N/A

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached to and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any, authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

NOTE. - This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 17 inclusive, are set forth on the reverse side hereof.


This certificate is effective from July 1, 2004 to June 30, 2005, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

SOUTHWEST REGION  
(REGION)

AUG 06 2004

(DATE)

  
Herman J. Lyons, Jr.  
(SIGNATURE)

Director of Central En Route  
and Oceanic Area Operations

(TITLE)

**CERTIFICATE OF AUTHORIZATION (COA)**

**For OPERATION OF REMOTELY OPERATED AIRCRAFT (ROA),  
IN THE OPERATING AIRSPACE IN THE VICINITY OF AND NORTHWEST OF LAS  
CRUCES AIRPORT, LAS CRUCES, NEW MEXICO, AND IN THE TRANSITION AIRSPACE  
BETWEEN THE OPERATING AIRSPACE AND THE WESTERN BOUNDARY OF RESTRICTED  
AREA R-5107B, AT AND BELOW 17,500 FEET MSL.**

**ISSUED TO:** Physical Science Laboratory (PSL), New Mexico State University (NMSU), Mr. Stephen B. Hottman, PSL Deputy Director

**EFFECTIVE:** July 1, 2004, through June 30, 2005.

**BACKGROUND:** ROA have no on-board pilot to perform see-and-avoid responsibilities. PSL shall ensure that an equivalent level of safety, consistent with the see-and-avoid concept, exists for all ROA flights, as would exist if a pilot were on board. The guidelines for such operations are contained in FAA Order 7610.4, Special Military Operations, Chapter 12, Section 9, Paragraphs 12-9-1 and 12-9-2.

**CONDITIONS:** This Certificate of Authorization is only applicable to the PSL/NMSU. It authorizes PSL/NMSU to conduct "Public" ROA flights, provided the ROA flight operations are performed in accordance with all of the requirements stipulated in the Special Provisions that follow, and any Special Provisions that may be subsequently issued by the FAA, Southwest Region Air Traffic Division (ATD). "Public Aircraft" are defined by Title 49, U.S.C., and FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Products.

1. This authorization is for the use of navigable airspace and DOES NOT:

a. Waive any State law or local ordinances. Should the proposed operation conflict with State law or local ordinance or require permission of local authorities or property owners, it is PSL's responsibility to resolve the matter.

b. Absolve PSL of the responsibility to operate ROA consistent with any flight restrictions issued by appropriate authorities for aircraft operations in specific airspace.

c. Authorize ROA operations within any restricted area or military operations area (MOA) without the permission of the controlling/using agencies, as appropriate.

d. Authorize ROA operations within Class A, C, D, or E Airspace unless prior approval is obtained in advance from the affected ATC facility.

1. Requests for modification of any of the Special Provisions shall be submitted in writing, at least 30 days in advance, to the FAA Southwest Region, Operations Branch (ASW-530), through September 30, 2004. After this date the request shall be submitted to the Northwest Mountain Region, Operations Branch (ANM-530). If NMSU/PSL desires to extend or renew the COA, the request shall be submitted in writing to ANM-530, also with 30-days lead-time.

## **SPECIAL PROVISIONS**

For ROA flight operations, the PSL shall:

1. Only operate "Public" ROA at or below 17,500 feet within the designated operating airspace and the transition airspace described in the attachment and reflected on the associated chart, unless otherwise authorized consistent with other Special Provisions contained in this COA. Operation within the transition airspace shall only be for ROA flights transitioning between the operating airspace and White Sands Missile Range's restricted area airspace or Holloman Air Force Base.
2. Ensure that flight operations are performed in a manner that does not pose a hazard to persons and property, both in the air and on the surface.
3. Be responsible at all times for collision avoidance between the ROA and other aircraft and ensure that an equivalent level of safety, comparable to the see-and-avoid responsibility of manned aircraft exists for all ROA flights, as would exist if a pilot were on board. Methods that PSL shall apply to perform the see-and-avoid responsibility include one, or a combination, of the following at all times the ROA is airborne:
  - a. When operating in Class D, E, or G airspace:
    - (1) Visual observation by surface or airborne observers.
    - (2) Radar monitoring using primary radar.
    - (3) Optical or electronics sensors that provide the ROA pilot with situational awareness of all other air traffic that pose a potential conflict.
  - b. When operating in Class A or C airspace, operating on an IFR flight plan and in compliance with an ATC clearance.
4. Ensure each individual involved in the flight operations of an ROA understands and complies with the responsibilities associated with his/her role.

5. Ensure that visual observers/radar monitors and ROA pilots;

a. Are properly trained and qualified.

b. Have no additional duties or responsibilities when performing their function.

c. Maintain direct communication with one another, so the visual observers/radar monitors can provide changes of heading and/or altitude to the ROA pilot to eliminate any potential conflict. The ROA pilot shall maneuver the ROA in compliance with headings and/or altitude changes specified by the visual observers or radar monitor, thereby, placing safety ahead of mission objectives.

d. When flying ROA in Class A, C, D, or under IFR in Class E airspace, the ROA pilot shall maintain direct radio communication with affected ATC facilities and comply with all ATC clearances and/or instructions. The ATC may waive the direct communication requirement if it determines safety can still be ensured without having direct communication with the ROA.

6. Comply with the following advance notification requirements:

a. For proposed ROA flights at or above 7,500 feet MSL, notify the 49<sup>th</sup> FW's Base Operations, Holloman AFB, 505-572-5410, at least 48 hours in advance.

b. For ROA flight operations performed under IFR, provide IFR flight plan data to the Albuquerque Automated Flight Service Station (AFSS) at least 3 hours, but no more than 6 hours, in advance.

c. For ROA flight operations that will be performed under VFR and more than 3 nautical miles (NM) from the Las Cruces Airport or above 7,500 feet MSL, coordinate with the Albuquerque AFSS to establish procedures for providing certain VFR Flight plan data that the AFSS will insert into the Albuquerque Center's computer for radar monitoring purposes.

d. For each ROA flight, at least 3 hours, but no more than 24 hours, in advance, provide the Albuquerque AFSS (1-800-525-9963) Notice to Airmen (NOTAM) data.

e. When the ROA flight will be performed without filing an IFR flight plan, the Albuquerque Air Route Traffic Control Center (ARTCC), Southeast Area Operations Supervisor (505-856-4573) is notified of the proposed ROA flight activity at least 1 hour in advance. The Albuquerque ARTCC Southeast area supervisor shall also be informed when the ROA flight operation is completed.

7. Ensure no ROA flight operations are performed over densely populated areas and no flight is conducted over any open assembly of people.
8. Ensure ROA flight operations conducted under VFR comply with the visibility and clearance from cloud minimums specified in FAR 91.155, except that the minimum visibility requirement shall always be 5 miles, regardless of altitude.
9. Ensure no ROA flights are conducted below 2,500 feet AGL within the route width of VR176 and VR1233 unless prior coordination with the military scheduling organization for these military training routes is accomplished to deconflict ROA operations from military aircraft scheduled to operate on these routes.
10. Ensure all ROA flights possess an operational Mode 3/A, 4096 code, with altitude reporting, air traffic radar beacon system (ATRB) transponder. This transponder requirement is waived for ROA flights that remain within 3 nautical miles of the Las Cruces Municipal Airport and no higher than 7,500 feet MSL.
11. Ensure aircraft position and strobe lights are operational and on anytime the ROA is airborne.
12. Ensure, during takeoff and landing and while the ROA is operating within 3 NM of the airport, three ground observers are used to observe the ROA and inform the ROA operator of any traffic nearby (two will scan airspace and one will continually observe the ROA).
13. When radar monitoring is the method used to perform the see-and-avoid function, conduct the ROA flight in Class E airspace and under IFR, unless, it can be determined that the flight airspace is clear of clouds. When it can be determined the airspace is clear of clouds the ROA may be operated under VFR.
14. Ensure the autonomous flight management system (FMS) is programmed so the ROA accomplishes one of the following in the event there is loss of the control link between the operator and the ROA:
  - a. Routes the ROA to a defined holding location, via a route that is totally contained in the defined operating airspace, for the purpose of attempting to reestablish a communication link between the pilot and the ROA. The holding area shall be of sufficient distance from any airport to remain clear of the normal aircraft flight patterns in the vicinity of the airport.
  - b. Lands on uninhabited land.


15. Coordinate directly with Albuquerque ARTCC to obtain approval to extend ROA flight operations outside the operating and transition airspace designated for ROA operations. The approval request shall be submitted to Albuquerque ARTCC, in writing, a minimum of 15 days prior to the proposed commencement of the ROA flight activity. Albuquerque Center is authorized to approve ROA flights outside the operating and transition airspace provided operations are only approved within Albuquerque ARTCC's area of jurisdiction and only within Class A airspace. When extended flight authorization is approved by Albuquerque Center, PSL shall:

a. Ensure ROA flights remain clear of restricted area airspace, unless approval to traverse this airspace is obtained from the using agency and this approval is noted in the remark sections of the IFR flight plan; e.g. "WSMR approval granted to traverse R-5107C."

b. Contingency procedures are in compliance with the criteria defined in paragraph 14 above, and no contingency route traverses restricted area airspace, unless approved by the using authority in advance.

16. Ensure that any ROA accident resulting in injury or substantial property damage shall be reported to the appropriate accident investigation authority.

17. Ensure a frequency analysis is performed to determine the communication links that are used to control and monitor the status of the ROA cannot be affected by frequencies used by other spectrum management users in the area

  
Herman J. Lyons, Jr.  
Director of Central En Route and  
Oceanic Operations Area

AIRSPACE AUTHORIZED FOR ROA OPERATIONS  
(UP TO 17,500 FEET MSL)

OPERATING AIRSPACE

BEGINNING AT:

A - 33-08-00N/108-28-00W TO  
B - 33-22-00N/108-12-00W TO  
C - 33-26-00N/108-02-00W TO  
D - 33-35-00N/107-50-00W TO  
E - 33-37-30N/107-37-00W TO  
F - 33-31-00N/107-21-30W TO  
G - 33-15-00N/107-26-00W TO  
H - 32-22-30N/106-57-00W THENCE  
VIA A 5NM ARC CLOCKWISE AROUND LAS CRUCES AIRPORT TO  
I - 32-14-00N/106-59-00W TO  
J - 32-23-00N/107-42-00W TO  
K - 32-30-00N/107-49-00W TO  
L - 32-47-00N/107-49-00W TO  
M - 32-52-00N/108-17-00W TO  
N - 33-00-00N/108-28-00W TO  
POINT OF BEGINNING

TRANSITION AIRSPACE

BEGINNING AT:

F - 33-31-00N/107-21-30W TO  
F1 - 33-35-00N/106-48-00W TO  
G1 - 33-13-00N/106-52-00W TO  
H1 - 32-19-30W/106-39-30W TO  
H - 32-22-30N/106-57-00W TO  
G - 33-15-00N/107-26-00W TO  
POINT OF BEGINNING

